Paper No. 1

GROWTH AND DEVELOPMENT OF TOBACCO SUCKERS FOLLOWING TOPPING

Heinz Seltmann and R. D. Decker, USDA, Agricultural Research Service, Crops Research Division, North Carolina State of the University of North Carolina, Raleigh, North Carolina

ABSTRACT

When Nicotiana tabacum cv. flue-cured is in flower the axillary buds are in various stages of development. In the axils of those leaves below the point of topping, there may be as many as three buds; primary, secondary, and/or tertiary. In leaf axils lower on the stalk, the number and stage of development of the buds are usually reduced. Topping, which destroys the apical dominance exerted by the growing point, stimulates growth of the axillary buds. The uppermost primary buds develop noticeably and establish a semblance of dominance. Removal of these buds (suckers) again will destroy apical dominance, and again the uppermost primary buds below these removed will develop noticeably. The appearance of secondary buds may occur following the removal of the primary buds in any given leaf axil. The pattern of development of suckers is probably due to the stage of development found in the various leaf axils at the time of topping.

REVIEW BY G. H. BURNETT

In the general practice of tobacco growing, the flower of the plant is removed (topped). This causes the buds in the axils of the leaves just below the flower to increase in size. The removal of these buds (suckering) increases top leaf size and increases the nicotine content. The author pointed out that each time the plant is topped or suckered the physical balance of the rest of the plant is changed.

Through several diagrams and slides of plants, Dr. Decker showed the regrowth of these axillary buds over several weeks and after a varying number of suckerings.

In one experiment, eleven days after topping, the buds on the top three nodes had grown approximately 20 cm, whereas on the 4th to 15th nodes they had grown only 2 cm.

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Another experiment showed that the next top three nodes, i.e., nodes 4 to 6, grew from approximately 2 cm at the time of suckering to 12 cm seven days after suckering. After seven more days they had grown to 25 cm. There was an increase in the length of nodes 7 to 14, but it was of small significance.

The author also showed how the next three nodes, i.e., nodes 7 to 9, again increased in size after the plant had been suckered a second time. Size increases were from 4 cm to 9 cm to 14 cm to 28 cm, respectively, seven, fourteen, and twenty-one days after the second suckering.

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